

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:  
inputting means for inputting image data  
5 described by a command correspond to each part of an  
image;

interpreting means for interpreting the  
command to form a bitmap image and to output an  
attribute information;

10 scanning means for scanning an original image  
to output color image data;

generating means for generating flag data  
indicating attributes of the original image based on  
the color image data and indicating the pixel  
15 preferring the same image process as the pixel based on  
the attribute information;

first combining means for combining the color  
image data and the bitmap image; and

20 second combining means for combining the flag  
data and the attribute information of the command.

2. An image processing apparatus according  
to claim 1, wherein said flag data includes a character  
flag, a color flag and a halftone dots flag.

25 3. An image processing apparatus according  
to claim 1, wherein the attributes of the image is  
generated based on a change amount of the color image  
data.

4. An image processing apparatus according to claim 1, wherein an image processing is performed for the color image data based on the flag data.

5 5. An image processing apparatus according to claim 1, wherein attribute information of the command includes graphic attribute, color attribute, natural image attribute and PDL image attribute.

10 6. An image processing apparatus according to claim 1, wherein a combining method of the first combining means is the same as a combining method of the second combining means pixel by pixel.

15 7. An image processing apparatus according to claim 1, wherein the second combining means combines a character flag of the flag data and a graphic attribute of the attribute information.

20 8. An image processing apparatus according to claim 1, wherein a combining result of the first combining means is compressed by using one compressing method and a combining result of the second combining means is compressed by using another compression method, and wherein the compressed results are stored a storage device.

25 9. An image processing apparatus according to claim 8, wherein the combining result of the first combining means is compressed by using a irreversible compression method and the combining result of the

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FOI b7D b7C b7E b7F b7G b7H b7I b7J b7K b7L b7M b7N b7O b7P b7Q b7R b7S b7T b7U b7V b7W b7X b7Y b7Z

second combining means is compressed by using a reversible compression method.

10. An image processing apparatus according to claim 1, wherein at least one of a color space conversion unit and binarizing processing unit for the combined image is controlled by the result of the second combining means.

11. An image processing apparatus according to claim 10, wherein when a portion is regarded as a character area and a black-and-white area by considering the result of the second combination means, the color space conversion unit converts the image data correspond to the portion by using coefficient of only black.

12. An image processing apparatus according to claim 10, wherein when a portion is regarded as a character area or a halftone dot area by considering the result of the second combination means, the binarizing processing unit binarizes the image data correspond using an error diffusion method.

13. An image processing apparatus according to claim 10, wherein when a portion is regarded as a PDL image area and a natural image area by considering the result of the second combining means, the binarizing processing unit binarizes the image data using dither processing, when a portion is regarded as not to be a PDL image area and to be a halftone dot

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combining the flag data and the attribute information of the command.

17. A computer program product, comprising a computer readable medium having computer program codes, said product including:

code for inputting image data described by a command correspond to each part of an image;

code for interpreting the command to form a bitmap image and to output attribute information;

code for scanning an original image to output color image data;

code for generating flag data indicating attributes of the original image based on the color image data and indicating the pixel preferring the same image process as the pixel based on the attribute information;

code for combining the color image data and the bitmap image; and

code for combining the flag data and the attribute information of the command.

18. An image processing apparatus comprising:

an interface unit arranged to input image data described by a command corresponding to each part of an image;

an interpret unit arranged to interpret the command to form a bitmap image and to output attribute information;

a scanner unit arranged to scan an original image to output color image data;

a generating unit arranged to generate flag data indicating attributes of the original image based

on the color image data and indicating the pixel  
preferring the same image process as the pixel based on  
the attribute information;

a first combine unit arranged to combine the  
color image data and the bitmap image; and

a second combine unit arranged to combine the  
flag data and the attribute information of the command.

19. An image processing apparatus according  
to claim 18, wherein said flag data includes a  
character flag, a color flag and a halftone dots flag.

20. An image processing apparatus according  
to claim 18, wherein the attributes of the image are  
generated based on a change amount of the color image  
data.

21. An image processing apparatus according  
to claim 18, wherein the color image data is processed  
based on the flag data.

22. An image processing apparatus according  
to claim 18, wherein attribute information of the  
command includes graphic attribute, color attribute,  
natural image attribute and PDL image attribute.

23. An image processing apparatus according  
to claim 18, wherein a combining method of the first  
combine unit is the same as a combining method of the  
second combine unit pixel by pixel.

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corresponding to the portion to data by using  
coefficient of only black.

29. An image processing apparatus according  
to claim 28, wherein when a portion is regarded as a  
character area or a halftone dot area by considering  
the result of the second combination unit, the  
binarizing processing unit binarizes the image data  
using an error diffusion method.

30. An image processing apparatus according  
to claim 28, wherein when a portion is regarded as a  
PDL area and a natural image area by considering the  
result of the second combine unit, the binarizing  
processing unit binarizes the image data using dither  
processing and when a portion is regard as not to be a  
PDL area and to be a halftone dot area by considering  
the result of the second combine unit, the binarizing  
processing unit binarizes the image data using an error  
diffusion processing.

31. An image processing apparatus according  
to claim 28, wherein when an portion is regarded as a  
character area by considering the result of the second  
combine unit, sharpness process is applied to the image  
data of the corresponding portion.

32. An image processing apparatus according  
to claim 28, wherein when an portion is regarded as a  
halftone dot area by considering the result of the



second combine unit, low-pass filter processes is applied to the image data corresponding to the portion.

33. An image processing apparatus comprising:

data inputting means for inputting image data, through an interface, described by a command correspond to each part of an image;

interpreting means for interpreting the command to form a bitmap image and to output attribute information;

scanning means for scanning an original image as digital signals pixel by pixel;

storing means for storing the scanned digital signals;

area discriminating means for discriminating areas based on characters of the original image;

feature data storing means for storing attribute flag data, indicating attributes of the image based on the scanned digital signal and indicating the pixel preferring the same image process as the pixel based on the attribute information, discriminated by the area discriminating means corresponding to the scanned digital signals pixel by pixel;

wherein the bitmap image is combined with the scanned digital signal on image storing means; and the attribute information of the command is also combined with the attribute flag data on feature data storing means.

FOI b7D b7C b7E b7F b7G b7H b7I b7J b7K b7L b7M b7N b7O b7P b7Q b7R b7S b7T b7U b7V b7W b7X b7Y b7Z

34. An image processing apparatus according to claim 33, wherein the attribute flag data includes PDL image flag which is information to determine image data correspond to the PDL, and wherein flag data is the scanned digital signal or image data described by the command.

35. An image processing apparatus according to claim 33, wherein an image processing is performed for the combined bitmap image and the scanned image signal; and wherein the image processes or parameters for the image process are changed based on the combined attribute information and the attribute flag data.

36. An image processing apparatus according to claim 34, wherein an image processing is performed for the combined bitmap image and the scanned image signal; and wherein the image processes or parameters for the image process are changed based on the combined attribute information, the attribute flag data and the PDL flag data.